

Section 109 MEASUREMENT AND PAYMENT

109.01 Measurement of Quantities. Quantities of work completed under the contract will be measured by the Engineer according to United States standard measures unless otherwise noted.

Quantities of materials furnished and of work performed under the contract will be determined by methods of measurement and computations that are generally recognized as conforming to good engineering practice.

Unless specified in the contract, manufacturing tolerances established by the industries involved will be accepted.

When required by the Engineer, the Contractor shall file copies of paid freight bills, trucking slips, bills of lading, and paid invoices for any material used in the work.

- A. **Payments Based on Plan Quantities.** When the contract specifies payment of an item or part of an item on a plan quantity basis, the payments will be those quantities shown on the plans. Any changes to the quantities will result from an authorized variation in the plan.

For earthwork, the basis for changes in quantities will include any of the following:

1. Changes in original ground topography after the original survey was made;
2. Any demonstrated errors discovered in plan quantities;
3. Any changes required by the Engineer during construction, such as: grade changes, changing of cut or fill slopes, and for excavation of peat, muck, marl, and underlying very soft clay.

If a Contractor believes that a payment based on a plan quantity basis is incorrect, the Contractor may request, in writing, that the Department check the questionable quantity. The request shall be accompanied by the Contractor's calculations, drawings, or other evidence indicating why the plan quantity is believed to be in error. If the plan quantity is in error, payment will be made according to the corrected plan quantity.

If the Department believes that the plan quantity is inaccurate, the Department may check the plan quantity. If the quantity is in error, payment will be made according to the corrected plan quantity. If during construction the Department finds that conditions have changed from those anticipated in design to the extent that actual measurement of a plan quantity item is warranted, the Department will measure the quantity and payment will be based on the measured quantity.

- B. **Linear and Area Measurements.** A station, when used as a definition or term of measurement, will be one hundred feet.

When the Method of Measurement specifies measurements in stations, miles or acres, the measurements will be horizontal measurements unless specified otherwise.

When the Method of Measurement for a particular item specifies that it will be measured in place, linear or area measurements will be taken at the surface of the completed item, parallel to the base.

- C. **Volume and Weight Measurements.** All materials specified to be measured as compacted-in-place (CIP) shall be measured in the field according to the subsection that applies to that material.

All materials specified to be measured by the cubic yard, loose measure (LM) will be measured in the hauling vehicle at the point of delivery, unless otherwise specified. The Engineer shall approve all vehicles used for this purpose. The shape of the hauling unit shall be such that the volume of the unit may be readily and accurately determined.

When material is measured by weight in tons, the unit shall be 2000 pounds.

1. **Aggregates.**

- a. Moisture determinations on aggregates will be made on the dry basis as follows:

Wet weight - dry weight = weight of water.

$$\frac{\text{Weight of water}}{\text{dry weight}} \times 100 = \text{percent moisture}$$

- b. Measurement of pay quantities of aggregates on a ton basis where a maximum specified amount of moisture is permitted will be computed as follows:

- Where the actual moisture, including liquid admixtures, present at time of weighing does not exceed the maximum moisture content permitted, the actual scale weights shall be used as pay quantities.
- Where the actual moisture present at time of weighing is more than the maximum moisture content permitted, the pay quantities shall be computed by the following equation:

$$A = B \frac{100 + C}{100 + D}$$

Where

- A = Pay quantity of aggregate (tons)
- B = Weight of wet aggregate (tons)
- C = Allowable moisture (percent)
- D = Actual moisture (percent)

2. Asphaltic Materials.

Asphaltic materials will be measured for payment in liters of material at 60 °F. Material measured at temperatures other than 60 °F will be corrected to volumes at 60 °F by means of the following formula or by use of ASTM D 1250.

Formula for the calculation of volume at 60 °F from volume at observed temperature:

$$V = \frac{V_1}{[K(T - 60) + 1]}$$

Where:

- V = Volume at 60 °F
- V₁ = Volume at observed temperature
- T = Observed temperature in °F
- K = Coefficient of expansion of HMA material

The coefficients of expansion, K, to be used in making volume corrections are as follows:

Material	Specific Gravity 60/60 °F	Coefficient per °F
Asphaltic Products	0.850 to 0.966	0.00040
Asphaltic Products	Above 0.966	0.00035

When the asphaltic material is furnished in tank cars, the number of gallons will be determined by the Department's laboratory and this information will be supplied on the laboratory reports.

When furnished from bulk plants or from partly used tank cars, the number of gallons will be calculated by weighing each load and converting to volume in gallons at 60 °F. This measurement will be based on the weight per gallon at 60 °F as recorded on the laboratory test report for the particular material involved. The number of gallons may be measured by the depth of the liquid in the hauling units or distributor, if the units are equipped with a plate or chart showing the calibration of the tank equating depth to gallons. The plate or chart must be provided by the manufacturer or certified by a responsible testing agency. It must also be mounted in a conspicuous location on the tank and show the calibration of the tank, equating inches of depth to gallons. When the quantity is computed by weight and converted to gallons, the calculation will be based on the following formula:

$$G = \frac{W}{S.G. (8.328)}$$

Where:

- G = volume in gallons at 60 °F
- W = weight of asphaltic material in pounds
- S.G. = specific gravity of asphaltic material at 60 °F

- D. **Measuring Wire and Steel Sheets and Plates.** The size of wire for electrical conductors shall be measured according to ASTM B 258.

When the term gage refers to the measurement of steel wire, it will mean the wire gage specified in ASTM A 510.

The term gage, when used concerning the measurement of steel sheets and light plates, will mean the gage referenced in ASTM A 568 for uncoated sheet and in ASTM A 525 for a galvanized sheet.

- E. **Measuring Depth of Reinforcement and Thickness of Concrete Pavement and Concrete Base Course.** Coring of concrete pavements and concrete base courses to determine thickness of concrete and depth of reinforcement will be performed according to section 602 and MTM 201.

- F. **Measuring Thickness of Miscellaneous Concrete Construction.** Coring to verify the thickness of concrete construction for other than pavement or structural concrete may be performed when evidence shows the thickness is not within the tolerances of the contract. Coring concrete construction may be performed on any portion or all of the work involved. Concrete pours 6 inches or more in thickness and more than 300 square yards in area will be cored according to MTM 201 and price adjustments will be as specified in subsection 602.04. The thickness of concrete pours suspected as deficient but less than 6 inches thick or less than 300 square yards, will be determined by suitable methods and deficiencies treated according to subsection 104.04.

- G. **Measuring Weight on Scales.** Platform, belt conveyor, and surge bin scales shall conform to the requirements of the *NIST Handbook 44* with the following exceptions and additional requirements.

The zero-load balance may be adjusted, either by an electronic mechanism designed to be manually operated to provide an automatic zero balance condition (push-button zero) or by an automatic means to maintain a digital zero balance. This requirement shall apply to all platforms and surge bin scales used for weighing bituminous mixtures.

The tolerance applications of *NIST Handbook 44* and to tests involving digital indications or representations, shall apply except that the tolerance value for platform scales shall be 2 pounds per 1000 pounds of load or the value of one scale division, whichever is larger. A scale shall not be used for weighing a load totaling more than the nominal capacity marked on the scale by the manufacturer. Any portion of the load over the nominal scale capacity will not be considered for payment.

The accuracy of the scale will be checked according to the procedure described in subsection 104.01.E.

The total weight of a single highway vehicle shall be weighed as a single draft and shall not be determined by adding the results obtained by separately weighing each end of the vehicle except that weighing of a coupled combination may be determined without uncoupling under the following conditions:

1. The brakes are released;
2. There is no tension or compression on the draw-bar;
3. The approaches are straight and in the same level plane as the scale platform;
4. The approaches are paved at least 50 feet in each direction with a seal coat or higher type surfacing; and
5. The approaches are of sufficient width and length to ensure level positioning of vehicles during the weighing operation.
6. The Engineer shall require a coupled vehicle to be re-weighed, with each unit being uncoupled, at least monthly during its use on the project. The total weight of the uncoupled units shall agree with the total weight of the coupled units within ± 0.2 percent. If the lack of agreement within 0.2 percent cannot be resolved, uncoupling will be required for continued use of the scale.

When a printout system is employed on a platform or a surge bin scale, it shall be equipped with a printer that shall print and identify all of the following information on a triplicate ticket for each truckload:

1. Project Number;
2. Contractor's Name;
3. Type of Material Being Weighed;
4. Time;
5. Date;
6. Sequential ticket number (may be preprinted on a ticket);
7. Gross weight;
8. Tare weight (trucks shall be tared at least twice daily);
9. Net weight;
10. Net accumulated jobs daily total.

The information shall be labeled so that each ticket can be readily understood. The system shall be interlocked to allow printing only when the scale has come to a complete rest.

109.02 Scope of Payment. The Contractor shall accept the compensation as provided in the contract as payment for furnishing necessary materials, labor, tools, equipment, and incidentals and for performing work under the contract. This compensation shall also be accepted as

compensation for loss or damage arising from the nature of the work or from the action of the elements (except as specified in subsection 108.07), or from any unforeseen difficulties that may be encountered during the prosecution of the work.

109.03 Payment for Increased Contractor Costs. Payment for increased Contractor cost of labor, equipment and material will be determined according to this subsection.

- A. The Department may authorize the payment of documented increase in labor cost, material cost and idled equipment only when a Contractor is unreasonably delayed in the construction of the project because of one or more of the following conditions:
 - 1. Right-of-way or right-of-entry required to perform the controlling operation was not available when needed;
 - 2. Utilities were not moved according to the contract that created a delay of the controlling operation;
 - 3. Other related contracts were not completed or permits were not obtained to a point where construction on the controlling operation could proceed; or
 - 4. Suspension of work ordered by the Engineer for reasons not provided for in the contract and not due to the fault of the Contractor.

As soon as a delay is caused by any of the above conditions, the Contractor shall submit to the Engineer a detailed listing of the equipment and labor and what their expected schedule of use on the project was. Included in the listing, the Contractor shall state its plan for the equipment and labor during the delay and show that no alternative work exists on the project for that equipment and labor. The Engineer must provide written approval of this listing before increased Contractor costs will be paid. Failure on the part of the Contractor to comply with these requirements shall relieve the Department of the responsibility for making compensation under this subsection.

- B. The Department will not authorize payment for increases in costs other than labor, material or equipment. Should the increased contract time period extend beyond an approved seasonal shutdown, the approved seasonal shut down will not be included in the period of time for which the Department will pay the increase in the cost of labor or equipment.
- C. Increases in cost for labor, equipment, and materials will be calculated as follows:
 - 1. **Payment For Increases In Labor Costs.** For unreasonable delays caused by conditions set forth in subsection 109.03.A, payments authorized for increases in labor costs will be based on the difference between old and new labor rates established by a State or Federal agency or an agreement between the employee's bargaining agency and the Contractor's and accepted by the Department. Payment will be based on certified payrolls. Payment will also include the increases in fringe benefit rates and increases in payroll taxes that the Contractor is required to pay.

- a. The Contractor shall furnish certified payrolls showing the labor rates and hours worked by each employee during the week immediately preceding the delay.
 - b. The Contractor shall furnish certified payrolls showing the labor rates and the hours worked by each employee during the authorized extended contract time due to the delay or until the project is completed, whichever comes first.
 - c. In case of a decrease in labor cost, the decreased payment will be computed in the same manner.
2. **Payment for Idled Equipment.** For unreasonable delays caused by conditions set forth in subsection 109.03.A, payment may be allowed on a rental basis for the idled equipment if any one of the following criteria is met:
- a. The equipment is on the project site at the time of the delay and is required for the controlling operation and can not be used at other locations on the project.
 - b. The equipment is specialized and directly related to the controlling operation, whether on or off the project site. This must be certified by the Contractor and verified by the Engineer.

The rental rate for idled leased or rented equipment will be the leased or rented rate. However, the Engineer may direct the Contractor to return equipment and take it off rental.

The rental rate for idled Contractor owned equipment will be one-half the rate established in subsection 109.07. No payment will be allowed for operating costs.

Payment will be limited to the difference between the hours used and 8 hours in any one day and to the difference between the hours used and 40 hours in any one week. No additional compensation for overhead will be allowed.

3. **Payment for Increased Cost of Materials.** For unreasonable delays caused by the conditions listed in subsection 109.03.A, payment for increased cost of materials will be based on differences in the invoice costs before and after the delay period. When requesting an increase in cost of materials, the Contractor shall document both the cost of materials during the week immediately preceding the delay and the cost when the work commences again.

109.04 Payments for Increased or Decreased Quantities. Whenever the quantity of any item of work as given in the contract is increased or decreased, payment for the item of work will be based on the quantity completed. The payment will be authorized at the unit price for the item named in the contract, except as otherwise provided in subsection 103.02.

109.05 Adjustments for Eliminated Items. The Engineer may eliminate the performance or the completion of any contract item. A fair and equitable amount, representing all direct costs incurred on the item prior to the elimination, shall be agreed upon in writing and paid to the Contractor.

109.06 Progress and Partial Payments. Progress payments will be made for units of work completed and partial payments for fabricated or processed nonperishable materials delivered for use on the project. Payments will be made in a timely manner, however, no claim will be considered for delayed payment of estimates.

A. Completed Work.

1. Progress payments will be based upon estimates prepared by the Engineer of the work items completed. The estimates are subject to final balancing according to subsection 109.09. Progress payments will be made biweekly if all of the following occur:
 - a. The work is progressing according to the progress schedule;
 - b. The written orders of the Engineer have been or are being fulfilled;
 - c. The time for completion must not have elapsed;
 - d. At least one-half the contract amount or \$1,000 has been earned during the estimate period.
2. From the total amount earned, the Michigan Department of Transportation will deduct and retain amounts according to the following schedule:
 - a. Two percent of the total contract amount.
 - b. When the Engineer has given notice that the project has attained 90 percent completion, the Michigan Department of Transportation may reduce the retainage to an amount less than two percent of the amount earned, as determined by the Michigan Department of Transportation. Before approval can be given, the Contractor shall file with the Department the written consent of the Surety for the reduction and furnish an affidavit that all indebtedness attributable to the contract has been paid in full or satisfactorily secured.
3. At the request of the Contractor and upon the approval of the Department, the retained amount shall be placed in an escrow account. If the Contractor elects to escrow the retainage, the escrow agent shall be selected by the Contractor but the selection of an escrow agent will be limited to any of the following principle places of business located in Michigan:
 - a. State or national banks;
 - b. State or federally chartered savings and loan associations; or
 - c. State or federally chartered credit unions.
4. An escrow agreement shall be entered into between the contracting parties and the escrow agent. The escrow agreement shall contain all of the following terms:

- a. That the escrow agent shall promptly invest all of the retained funds in escrow;
- b. That the escrow agent shall hold the retained funds in escrow until receipt of notice from the Department;
- c. That the escrow agent shall promptly remit the designated portion of the retained funds in escrow to the Contractor upon receipt of notice from the Department, however, if the notice received is of overpayment or default of the contract, the escrow agent shall promptly remit the designated portion of the retained funds in escrow to the Department;
- d. That the escrow agent is responsible for all investments and money as a result of the deposit of the amount until released from responsibility pursuant to the escrow agreement;
- e. That the Contractor shall pay all expenses regarding the deposit, investment, and administration of the retained amount and all other charges made by the escrow agent; and
- f. Any other provision agreed to by the contracting parties and the escrow agent necessary or proper for purposes of this section.

The final payment will be made according to the requirements specified under subsection 109.09.

B. **Delivered Materials.** The cost of nonperishable materials, including freight charges, that meet the contract requirements and are produced or purchased for incorporation into the contract, may be paid when all of the following conditions are met:

- 1. The value of the delivered material, to be used in one item of work, exceeds \$3,000 and is not scheduled to be incorporated into the work within 30 days after delivery;
- 2. Proof of payment, authenticated by the supplier, is presented to the Engineer. However, if the prime Contractor is the supplier, the payment will be based on proven production cost; and
- 3. The materials are stored or stockpiled on the project or at approved locations near the project.

The unit price for delivered materials will be based on amounts paid for the materials delivered to the project. However, a percentage of the contract unit price involved will be retained to cover completion of the work according to the schedule of allowances determined by the Department. Payment will not be made for materials in excess of contract quantities. When partial payment is made for materials, the materials shall be reserved for use on the project by the Department. The Contractor shall be entirely responsible for any loss or damage to the materials until the materials are incorporated in the work and the work is accepted.

The Contractor shall assume the cost of any additional testing required by partial payment for stockpiling.

Approval of partial payment for stockpiled materials will not constitute final acceptance of such materials for use in completing items of work.

When the Contractor provides receipted bills, paid invoices, or other satisfactory evidence of payment by the fabricator for structural steel that is to be a part of the completed structure and that has been produced by the steel mill and delivered to the fabricator, the Engineer will include the value of the steel in the progress estimate. Detailed descriptions of the delivered material, including weights, dimensions, heat and unit numbers, and chemical and physical test reports, shall be shown on the invoice or supplied to the Engineer. The material shall be stored separately and used only for fabricating the structural steel for this project.

Upon receipt of payment by the Department, the Contractor shall immediately pay the fabricator for those materials.

If the fabricator notifies the Department that payment for materials paid for by the Department has not been received, and the fabricator's claim remains unsatisfied for more than 30 days following the Department's payment to the Contractor, the amount provided for payment to the fabricator will be deducted from the next progress estimate.

- C. **Materials Stockpiled Off-Site.** When certain materials specifically produced or fabricated for a project must be stored for more than 30 days at off-site locations, partial payment for the stored materials will be made according to the schedule of allowances determined by the Department and included in this subsection, if all of the following conditions are met:
1. The value of the stored material for use in one of the categories listed below exceeds \$3,000;
 2. Proof of payment for the material is presented to the Engineer, except that where the prime Contractor is the fabricator or producer, the production cost must be proven;
 3. The off-site storage must be a separate identifiable storage area, accessible for inspection, and at a location approved by the Engineer; and
 4. The materials for which partial payments are to be made must have been accepted by the Department for shipment or for use.

The unit price for the stored materials will be based on the amounts paid for the material or an amount up to the percentage shown herein, whichever is the lesser. The amount retained will be that amount considered sufficient to cover delivery costs and completion of the work included in the bid item. Payment will not be made for any materials in excess of contract quantities. When partial payment is made for materials, the materials shall become the property of the Department but the Contractor shall be entirely responsible for any loss or damage to the materials until they are incorporated in the work and the work is accepted.

The Contractor shall present evidence that the producer of the material is fully aware of all details of the transaction.

The only materials that will be considered for partial payment while stored at off-site locations, unless otherwise authorized, and the maximum percentage of bid price to be paid for the material will be as follows:

Prestressed Concrete Beams, Furnished.	85%
Prestressed Concrete Water Main.	60%
Structural Steel, Furnishing and Fabricating.	90%
Structural Steel, Fabricating and Erecting	75%
Special Bearings	90%
Sign Trusses	50%

109.07 Force Account Work. In the event the parties are unable to reach agreement on unit or lump sum prices for extra work the extra work shall be done on a force account basis and will be compensated as described in this subsection. The compensation provided in this subsection shall be accepted by the Contractor as payment for extra work done by force account, and shall cover profit, superintendence, general expense, overhead, miscellaneous unforeseen costs, and the use of small tools and equipment.

- A. **Work Plan.** The Engineer will order the work, including any required offsite work, to be done by force account. Prior to starting the force account work, the Contractor and the Engineer will work together to develop a work plan. The work plan shall include, to the extent possible, a progress schedule of controlling items and their duration, equipment to be used (Contractor owned and rented), labor to be used (number of people and crafts) and a listing of material. From the work plan the Engineer will prepare a budget recommended for the force account work. If the conditions relative to the force account change or if the progress of the work becomes inconsistent with the original work plan, the Contractor and the Engineer shall jointly revise the work plan.
- B. **Labor.** An amount equal to the sum of the following labor costs, plus 35 percent of the sum, will be paid to the Contractor.

For foreman and laborers, the Contractor will receive the rate of wage (or scale) which was agreed to in writing before beginning work. This rate will be paid for the time that the foreman and laborers are engaged in the work. This will include hours required by a collective bargaining agreement or other employment contract applicable to the class of labor employed on the work, exclusive of time included in the "estimated operating costs." The Contractor will receive the amount paid to, or on behalf of, workers for vacation benefits, health and welfare benefits, pension fund benefits, or other benefits when the amounts are required by a collective bargaining agreement or other employment contract generally applicable to the classes of labor employed on the work.

The superintendent's compensation will not be included in this payment.

- C. **Bond, Insurance, and Tax.** Bond premium, workmen's compensation insurance, personal injury public liability and property damage public liability insurance, unemployment

compensation, and federal social security levied against the Contractor will be paid at cost. Single business tax will be paid according to Department procedures. The Contractor shall furnish satisfactory evidence of the amounts paid for each of these required costs as related to force account work. An amount equal to 10 percent will be added to each of these costs.

- D. **Materials.** For materials used and accepted by the Engineer, the Contractor will receive the cost of materials delivered, including tax and transportation charges, plus 15 percent.

If a change in the amount or type of force account work results in a surplus of the material ordered and delivered to the project site, the Department will reimburse the Contractor for the costs incurred in returning the surplus material to the supplier.

Discount for prompt payment or penalty for late payment will not be considered in determining the cost of materials charged to the force account work.

- E. **Equipment and Plant.** The Contractor will be paid according to the following rates for any equipment or special equipment other than small hand or power tools, the use of which is approved by the Engineer.

These rates include the cost of fuel, oil, lubrication, supplies, necessary attachments, repairs, overhaul and maintenance of any kind, depreciation, storage, overhead, profits, and all incidentals. These rates also include the cost of insurance covering the usual insurable risks, including fire and theft. The Department will not be liable for losses that can be covered by insurance.

Upon request, the Contractor shall furnish to the Engineer either original bills and invoices or certification documenting the equipment's original invoice price plus improvements. The Department will not pay equipment costs over the equipment's original invoice cost plus any documented improvements on a total project basis.

Time elapsed while equipment is broken down and being repaired shall not be considered for payment. Time elapsed after the Engineer has advised the Contractor that the equipment is no longer needed to complete the force account work shall not be considered for payment except for transportation costs.

1. **Contractor Owned Equipment.** This subsection shall apply to the equipment and plant owned directly by the Contractor or by entities that are divisions, affiliates, subsidiaries, or in any other way related to the Contractor or parent company.
 - a. The rate for each piece of Contractor owned equipment used, including appurtenances and attachments to equipment, will be determined by using the *Rental Rate Blue Book for Construction Equipment*, Volume 1, 2, or 3, by Dataquest, Inc. (Blue Book). The edition that is current at the time the force account work is started will apply. The base hourly rate will be equal to the published monthly rental rate divided by 176, modified by the rate adjustment factor and the applicable map adjustment factor, plus the "estimated operating costs per hour."

- b. For equipment not listed in the Blue Book, the rate will be determined by using the published rental rate listed for a similar piece of equipment giving proper consideration to the capacity, size, horsepower, and age of the equipment. For equipment for which there is no comparable in the Blue Book, the monthly rate shall be reasonable but not more than 5 percent of the invoiced cost of the equipment. The base hourly rate shall then be determined by dividing the monthly rate by 176. Rates shall be agreed upon in writing before the equipment is used.
- c. No payment will be allowed for small hand and power tools that are not listed in the Blue Book. Small hand and power tools listed in the Blue Book at a rate of less than \$1.00 per hour will be considered as part of overhead and will not be paid for separately.
- d. The rates used for Contractor owned trucks used to haul material will be those published by the Department. The rates will be reviewed and adjusted periodically. Separate payment for the driver will be allowed as described under labor. The rate for the foreman's transportation unit will be \$7.00 per hour.
- e. The minimum time per day for equipment used productively in force account work will be 2 hours. For equipment which is required intermittently, the time will be determined in 2 hour intervals after the equipment is first needed and put into use in the performance of the force account work. The rate for each 2 hour interval will be full rate or stand by rate according to subsection 109.07.E.3, depending upon the productive use or non-use of the equipment during each 2 hour interval.
- f. Travel time to the location of the force account work will be included when the equipment is moved under its own power. When equipment is moved from one site to another by means other than its own power, the actual operating time during periods of loading and unloading equipment will be paid for at the established rate and transportation costs will be allowed.

Transportation charges for each piece of equipment to and from the work site will be paid provided:

- Equipment is obtained from the nearest available source;
- Return charges do not exceed the delivery charges; and
- Charges are restricted to those units of equipment not already available and not on or near the project.

2. **Non-Contractor Owned Equipment.** If the Contractor is required to rent a specific type of equipment, the Contractor shall inform the Engineer of the need to rent the equipment and of the rental rate for that equipment before using it on the work site. The Contractor will be paid the actual rental for the equipment for the time that the equipment is used to accomplish the work, plus the cost of moving the equipment onto and away from the job, provided the total rental rate does not exceed the rental rate established by the Blue Book plus operating costs or Department published rates for trucks. The Contractor shall provide a copy of invoices for all rental expenses incurred.

3. **Standby Rate and Allowable Hours.** For Contractor owned equipment the standby rate will be one-half the rate established in subsection 109.07.E.1. No payment will be allowed for operating costs. The standby rate will only be allowed if both of the following conditions are met:

- a. The Engineer specifically required the equipment to remain on the site for later use on the force account activity; and
- b. Work is being performed on the force account activity when the equipment is idle.

Payments for standby time will not be made on any day the equipment operates for 8 or more hours. For equipment accumulating less than 8 hours operating time on any normal work day, standby payment will be limited to only that number of hours that, when added to the operating time for that day, equals 8 hours.

- F. **Miscellaneous.** No additional allowance will be made for general superintendence or other costs for which no specific allowance is provided.
- G. **Subcontracting or Hiring Services by Others.** For administration costs in connection with approved subcontract work or hiring services by other to perform specialized type of work which the Contractor is not qualified to do, the Contractor shall receive an amount equal to 5 percent of the total cost of the work computed as set forth above. Prior approval by the Engineer is required.
- H. **Compensation.** The Contractor's representative and the Engineer shall compare records of the cost of work completed on a force account basis and bring this cost into agreement at least once a week.
- I. **Statements.** Payment will be made for work performed on a force account basis after the Contractor has furnished the Engineer with an itemized statement of the cost of the work. The percentage added to each of the following categories is compensation for expenses not specifically designated.

The Contractor shall use a standard MDOT form or approved equal that includes the following details for reporting all force account costs.

- 1. **For Each Employee.** Name, classification, dates worked, time worked each day, total time worked on the force account activity, hourly rate of pay, total wages and fringe benefits.
- 2. **For Each Unit of Equipment Used.** Description, dates used, number of hours operated each day, standby hours, total hours, rental rate, and total cost.
- 3. **For Quantities of Materials.** Prices including transportation costs and total cost. Statements shall be documented and supported by certified payrolls, and invoices for all materials used and transportation charges.

If materials used on the force account work are not specifically purchased for the work but are taken from the Contractor's stock, the Contractor shall give the Engineer an affidavit certifying the following:

- a. The materials were taken from stock;
- b. The quantity claimed was used; and
- c. The price and transportation claimed represents the Contractor's cost.

109.08 Source of Supply and Carrier Rates on Construction Materials. Inability to secure satisfactory materials from the source upon which the bid was based, or changes in carrier rates, or the alteration of transportation facilities for these materials during the life of the contract, shall not constitute cause for claim for extra compensation.

109.09 Final Inspection, Acceptance, and Final Payment. The Engineer shall make a final inspection after written notification by the Contractor that the work is completed. If work is not acceptable to the Engineer at the time of inspection, the Contractor will be advised in writing of specific defects to be remedied before final acceptance.

After the work is accepted, the Engineer will prepare a final estimate of work performed. The Contractor shall have 30 days of issuance of the final estimate to file all claims or objections to the quantities within the final estimate. If no claims or objections are filed, the Department will process the final estimate for approval and final payment. At that time, the Contractor will be furnished, by certified mail, a copy of the approved final estimate.

The final payment will be made when the Contractor has provided the following:

- A. All reports or documents required by the Department and the Federal Highway Administration;
- B. The consent of the Surety for payment of the final estimate; and
- C. Satisfactory evidence by affidavit, or other means that all the indebtedness due to the contract has been fully paid or satisfactorily secured. If the evidence is not furnished, the Department may retain out of any amount due the Contractor sufficient sums to cover all lienable claims unpaid.

The Department can recover from the Contractor in the final estimate all overpayments. However, no recovery for overpayment will be made if both of the following conditions exist:

- A. The final estimate is issued more than 6 months after the acceptance of the project; and
- B. The overpayment was paid to a Subcontractor not in existence at the time of the final estimate.

Any claim for additional compensation that has not been approved on or before the date that the Contractor is furnished a copy of the approved final estimate, shall be considered as denied by the Department as of that date.